

HUBUNGAN KADAR HEMOGLOBIN DAN JUMLAH ERITROSIT DONOR TERHADAP KADAR HEMOGLOBIN, HEMATOKRIT, DAN JUMLAH ERITROSIT PRODUK DARAH *PACKED RED CELL* (PRC) DI PMI BANYUMAS

ABSTRAK

Latar Belakang - *Packed red cell* (PRC) adalah produk darah yang didapat dari hasil pemisahan sebagian besar plasma pada darah lengkap. Produk PRC digunakan untuk menggantikan kurangnya kapasitas darah pasien yang berperan dalam mengangkut oksigen. Peningkatan kadar hemoglobin (Hb) dalam pembuatan PRC merupakan parameter penting dalam menilai kualitas produk PRC. Kadar Hb donor tentu akan mempengaruhi keragaman komponen lainnya meliputi Hb, hematokrit (Ht), dan jumlah eritrosit produk PRC. Proses sentrifugasi dalam pembuatan PRC juga merupakan faktor risiko hemolisis dan perubahan komponen eritrosit produk.

Tujuan - Mengetahui hubungan kadar Hb dan jumlah eritrosit donor terhadap kadar hemoglobin, hematokrit, dan jumlah eritrosit produk darah PRC.

Metode - Penelitian ini menggunakan analitik observasional dengan pendekatan *cross-sectional study* yang dilakukan pada pendonor pria di PMI Banyumas pada bulan Oktober-November tahun 2022. Analisis data dilakukan menggunakan uji korelasi *Pearson-Spearman* dengan total 56 sampel.

Hasil - Terdapat hubungan yang signifikan antara kadar Hb donor dengan kadar Hb PRC ($p= 0,003$ dan $r= 0,39$) dan jumlah eritrosit donor dengan jumlah eritrosit PRC ($p= 0,02$ dan $r= 0,31$). Tidak terdapat hubungan yang signifikan antara kadar Hb donor dengan Ht PRC ($p= 0,85$ dan $r= -0,02$) dan jumlah eritrosit PRC ($p= 0,15$ dan $r= -0,20$) serta jumlah eritrosit donor dengan kadar Hb PRC ($p= 0,19$ dan $r= 0,18$) dan Ht PRC ($p= 0,91$ dan $r= 0,02$).

Simpulan - Terdapat hubungan signifikan antara Hb donor dengan Hb produk PRC dan terdapat hubungan signifikan antara jumlah eritrosit donor dengan jumlah eritrosit PRC. Tidak terdapat hubungan signifikan antara Hb donor dengan Ht dan jumlah eritrosit produk PRC serta tidak terdapat hubungan signifikan antara jumlah eritrosit donor dengan Hb dan Ht produk PRC.

Kata Kunci: *packed red cell*, hemoglobin, hematokrit, jumlah eritrosit, donor darah, produk darah

**CORRELATION BETWEEN HEMOGLOBIN AND ERYTHROCYTES
COUNT OF DONOR TO HEMOGLOBIN, HEMATOCRIT, AND
ERYTHROCYTES COUNT OF PACKED RED CELL (PRC) PRODUCTS
AT PMI BANYUMAS**

ABSTRACT

Background – Packed red cell (PRC) is a blood product obtained from the separation of most of the plasma in whole blood. PRC products are used to replace the lack of blood capacity of patients who play a role in transporting oxygen. Increased hemoglobin (Hb) levels in the manufacture of PRC is an important parameters in assessing the quality of PRC products. Donor Hb levels will certainly affect the diversity of other components including Hb, hematocrit (Ht), and erythrocytes count of PRC products. The centrifugation process in the manufacture of PRC is also a risk factor for hemolysis and changes in the erythrocyte components of the product.

Objectives - To see the correlation between the Hb and erythrocytes count of a donor to hemoglobin, hematocrit, and erythrocytes count of packed red cell (PRC) products at PMI Banyumas.

Methods - The researched was an observational analytic study with a cross-sectional study approached which was conducted on donors at PMI Banyumas in October-November 2022. Data analysis was carried out using the Pearson-Spearman correlation test. The total sample obtained was 56 male subjects.

Results - The study showed that there are a significant correlation between donor Hb to Hb of PRC ($p= 0.003$ and $r= 0.39$) and donor erythrocyte count to erythrocyte count of PRC ($p= 0.02$ and $r= 0.31$). There are no significant correlation between donor Hb to Ht of PRC ($p= 0.85$ and $r= -0.02$) and donor Hb to erythrocytes count of PRC ($p= 0.15$ and $r= -0.20$). There is no significant correlation between donor erythrocyte count to Hb of PRC ($p= 0.19$ and $r= 0.18$) and donor erythrocyte count to Ht of PRC ($p= 0.91$ and $r= 0.02$).

Conclusion - There is a significant correlation between donor Hb and Hb of PRC products. There are a significant correlation between donor erythrocytes count to erythrocytes count of PRC product. There are no significant correlation between donor Hb to Ht and erythrocytes count of PRC product. There are no significant correlation between donor erythrocytes count to Hb and Ht of PRC product

Keywords: Packed red cell, hemoglobin, hematocrit, erythrocytes count, blood donation, blood products